European Journal of Work and Organizational Psychology

ISSN: 1359-432X (Print) 1464-0643 (Online) Journal homepage: http://www.tandfonline.com/loi/pewo20

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To cite this article: Jonas Debusscher, Joeri Hofmans & Filip De Fruyt (2016) The effect of state core self-evaluations on task performance, organizational citizenship behaviour, and counterproductive work behaviour, European Journal of Work and Organizational Psychology, 25:2, 301-315, DOI: 10.1080/1359432X.2015.1063486

To link to this article: http://dx.doi.org/10.1080/1359432X.2015.1063486

Published online: 06 Jul 2015.

European Journal of Work and Organizational Psychology, 2016
Vol. 25, No. 2, 301–315, http://dx.doi.org/10.1080/1359432X.2015.1063486

The effect of state core self-evaluations on task performance, organizational citizenship behaviour, and counterproductive work behaviour

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(*Received 14 April 2014; accepted 14 June 2015*)

Although the personality–performance relationship has been studied extensively, most studies focused on the relationship between between-person differences in the Big Five personality dimensions and between-person differences in job performance. The current paper extends this research in two ways. First, we build on core self-evaluations (CSEs): an alternative, broad personality dimension that has proven to be a good predictor of job performance. Second, we tested concurrent and lagged within-person relationships between CSEs and task performance, organizational citizenship behaviour (OCB), and counterproductive work behaviour (CWB). To this end, we conducted two experience sampling studies; the first one assessing the relationship between state CSEs and levels of momentary task performance and OCB, and a second study in which employees reported on their level of state CSEs and momentary CWB. Results showed that there is substantial within-person variability in CSEs and that these within-person fluctuations relate to within-person variation in task performance, OCB, and CWB towards the organization, and CWB towards the individual. Moreover, CSEs prospectively predicted within-person differences in task performance and CWB towards the organization, whereas the reversed effect did not hold. These findings tentatively suggest that state CSEs predict performance, rather than the other way around.

Keywords: state core self-evaluations; task performance; organizational citizenship behaviour; counterproductive work behaviour; within-person variability

In the domain of work and organizational psychology, the personality–performance relationship has been studied extensively (Barrick & Mount, 1991; Barrick, Mount, & Judge, 2001). The primary reason is that predicting employee performance from stable, person-related characteristics (i.e., personality traits) is attractive from both a practical and a theoretical point of view. With respect to the former, a strong, reliable relationship between personality and performance paves the way for using parsimonious personality assessment instruments in, for example, employee selection procedures. Regarding the latter, it yields useful insights into the determinants of job performance and the consequences of personality at work.

Up until now, most studies on the personality–performance link have focused on how individual differences on each of the Big Five personality dimensions related to individual differences in general indices of work performance (Barrick & Mount, 1991; Hurtz & Donovan, 2000; Neal, Yeo, Koy, & Xiao, 2012). Recently, however, this approach has been called into question. The first reason is that awareness is growing that performance is not static, but rather episodic in nature (Beal, Weiss, Barros, & MacDermid, 2005; Debusscher, Hofmans, & De Fruyt, 2014, 2015), which means that it not only varies between individuals, but also changes over time within an individual. As a result, it becomes important to study not only the stable, trait-like antecedents of performance, but also its dynamic, state-like precursors (Dalal, Bhave, & Fiset, 2014). This awareness closely aligns with a recent call in the personality domain to study not only stable personality traits, but also the more volatile, dynamic personality states (Judge, Simon, Hurst, & Kelley, 2014). The second reason is that, whereas the Big Five personality dimensions cover a substantial part of what is referred to as personality, "they fail to capture chronic differences in how individuals evaluate themselves" (Kacmar, Collins, Harris, & Judge, 2009, p. 1572). This implies that it might be interesting to go beyond the Big Five and study those aspects of personality that tap more into self-evaluations.

In the present study, we address these limitations by investigating if and how within-person variation in core self-evaluations (CSEs)—or the appraisals a person makes about his/her own self-worth, capabilities, and competences (Judge, Locke, Durham, & Kluger, 1998)—relates

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to within-person variation in job performance. By doing so, we contribute to the literature on the personality–performance relationship in two ways. First, by focusing on the relationship between state CSEs and momentary job performance, we study the predictive validity of a part of personality that the Big Five (and therefore previous studies) failed to cover. Second, by investigating not only concurrent, but also lagged relationships, we shed light on the directionality of the relationship between state CSEs and momentary job performance. In what follows, we will first elaborate on the relationship between trait CSEs and general job performance. Second, we will switch the focus from between- to within-person differences. Finally, we will discuss the hierarchical model of approach-avoidance motivation, which will serve as the theoretical framework for developing our hypotheses.

The relationship between CSEs and job performance

Less than two decades ago, Judge, Locke, et al. (1998) introduced the concept of CSEs. CSEs are conceptualized as a broad meta-trait encompassing four different lower-order traits, namely generalized self-efficacy, self-esteem, emotional stability, and locus of control. Generalized self-efficacy is a measure of a person's perceived expectation to perform and cope successfully. Self-esteem consists of an overall appraisal of one's self-worth. Emotional stability reflects a person's tendency to feel calm and secure. Locus of control, lastly, pertains to the belief that desired effects will follow from one's own actions and are not the result of faith (Chang, Ferris, Johnson, Rosen, & Tan, 2012). From the very beginning, CSEs have been successfully linked to several work outcomes such as job satisfaction and job performance (Judge, Erez, & Bono, 1998; Judge, Locke, et al., 1998).

Because people high in CSEs approach their goals differently than people low in CSEs do, the relationship between CSEs and job performance can be explained using the approach-avoidance framework (Chang et al., 2012; Ferris et al., 2011). High CSE people are typically high on approach and low on avoidance motivation, which implies that they have a heightened sensitivity for positive, whereas being less focused on negative stimuli. This specific combination—high approach and low avoidance motivation—makes people perform better (Ferris et al., 2011). Instead, employees with low CSEs are less approach- and more avoidant-oriented than people high in CSEs, which implies that they focus more on negative stimuli while overlooking the positive ones. This low approach and high avoidance orientation makes them perform less than high CSE employees (Chang et al., 2012; Ferris et al., 2011). According to Ferris et al. (2011), the effect of approach-avoidance motivation on performance can be understood from the fact that avoidance motivation depletes more self-regulatory resources than approach motivation. Because these self-regulatory resources are put to work in all situations in which a person actively wants to change, modify, or alter her/his behaviours to achieve desired outcomes (Vohs, 2006; Vohs et al., 2008), and since these resources are finite, a loss of self-regulatory resources leads to poorer self-control (Vohs, 2006). Thus, focusing on avoiding things that could go wrong uses up more of the limited self-regulatory resources, which can then no longer be used to actively alter one's behaviour towards increased performance. Because of this reason, avoidance motivation (and thus low CSEs) relate to lowered performance (Ferris et al., 2011). In line with these predictions, the meta-analysis of Judge and Bono (2001) found a correlation of .23 between trait CSEs and job performance.

The CSEs–job performance link: from between- to within-person differences

As illustrated above, previous studies on the CSEs–job performance link have almost exclusively focused on the relationship between between-person differences in CSEs (i.e., trait CSEs) and between-person differences in job performance (Chang et al., 2012). Whereas this has, without a doubt, strengthened our understanding of the relationship between CSEs and job performance, such an approach has two important limitations.

First, the question whether the positive between-person relationship between CSEs and job performance generalizes to the within-person level has remained unanswered. Note that this question is far from trivial, as there are theoretical (Judge, Hulin, & Dalal, 2012) and empirical (Dóci & Hofmans, 2015; Ferris et al., 2011; Schinkel, Van Dierendonck, & Anderson, 2004) indications of substantial and systematic within-person variability in people's CSEs. Judge et al. (2012), for example, argued that CSEs can change over a course of minutes, hours, and days in response to working events such as receiving feedback, past performance, and job rewards. Moreover, the lower-order traits that constitute CSEs, such as neuroticism (Beckmann, Beckmann, Minbashian, & Birney, 2013; Debusscher et al., 2015) and self-esteem (Kernis & Waschull, 1995), also show considerable within-person variation. This implies that, apart from a trait component, CSEs also have an important state component, with state CSEs being the momentary enactments of CSEs that have "the same affective, behavioral, and cognitive content as their corresponding trait" (Fleeson, 2012, p. 52). Because, according to the integrative approach to personality, trait and state personality are two sides of the same coin, a good understanding of personality can only be obtained when the effects of both the trait and state components are studied (Judge et al., 2014). Moreover, our question regarding the within-person relationship is important, because it is well known that relationships at the between-person level do not necessarily transfer to the within-person level (Hamaker, 2011). For example, the relationship between performance and self-efficacy reverses when going from the between- to the within-person level (Vancouver, Thompson, Tischner, & Putka, 2002). Finally, also from a practical point of view, studying the within-person relationship between state CSEs and momentary job performance is important as states—in contrast to stable traits—can be more readily influenced by the organization through the implementation of various initiatives such as, for example, improved feedback structures (see Judge et al., 2012).

The second important implication of the almost exclusive focus on between-person differences is that the studies that are used to examine them (i.e., between-person, cross-sectional studies) are not conclusive regarding the directionality of the relationship. Nevertheless, almost all studies have interpreted the positive relationship as support for the idea that higher CSEs *lead to* increased job performance (Bowling, Wang, Tang, & Kennedy, 2010). Whereas this makes sense from a theoretical point of view (especially when CSE is conceptualized as a stable trait), the reverse relationship (i.e., job performance leading to CSEs) may also hold. Support for reversed directionality can, for example, be found in the recently developed Core Self-Evaluations Job Affect Multilevel (CSEJAM) model of Judge et al. (2012). According to this model, variation in one's work and life environment (e.g., performing well, attaining success) leads to variation in state CSEs. Variation in state CSEs, in turn, relates to job affects (e.g., moods, discrete emotions), which subsequently trigger affect-driven behaviours (e.g., OCB, CWB). The CSEJAM model thus conceptualizes job performance as both an antecedent and a consequence of state CSEs, and in line with this idea, a recent meta-analysis of Sitzmann and Yeo (2013) has shown that self-efficacy—being one of the components of CSEs—is a product of past and an antecedent of future performance (although the former relationship is substantially stronger than the latter).

To tackle both limitations (i.e., no research on the within-person CSEs–performance relationship and on its directionality), we chose to study the within-person relationship between state CSEs and three performance dimensions, namely task performance, organizational citizenship behaviour (OCB), and counterproductive work behaviour (CWB). Task performance refers to the degree to which a person fulfils his or her in-role duties (i.e., fulfilling the tasks expected from you in your job) (Rotundo & Sackett, 2002; Williams & Anderson, 1991). OCB pertains to positive extra-role performance (e.g., helping others, saying good things about the organization to others, etc.) (Rotundo & Sackett, 2002). CWB, lastly, consists of negative extra-role performance (e.g., talking bad about the organization, excluding colleagues, stealing from the organization, etc.). Whereas it has long been believed that OCB and CWB should be strongly negatively correlated because they conceptually lie at the extremes of the same continuum (i.e., the continuum hypothesis), recent studies have shown that the between-person relationship is modestly negative (Dalal, 2005), whereas the within-person relationship is weaker and sometimes even positive in sign (Dalal, Lam, Weiss, Welch, & Hulin, 2009; Ilies, Peng, Savani, & Dimotakis, 2013). Moreover, although OCB and CWB are often seen as uniform, one-dimensional constructs (Allen & Rush, 1998; Hoffman, Blair, Meriac, & Woehr, 2007; LePine, Erez, & Johnson, 2002), a number of authors have argued to break each of them down into two sub-dimensions based on the target of the behaviour, namely OCB and CWB towards other individuals (e.g., helping colleagues or excluding colleagues) (OCB-I and CWB-I, respectively) and OCB and CWB towards the organization (e.g., saying good things about the organization to others or speaking bad about the organization to others) (OCB-O and CWB-O, respectively) (Bennett & Robinson, 2000; Dalal et al., 2009; Organ, 1997; Williams & Anderson, 1991). Previous studies have shown that this distinction is an important one as OCB-I and OCB-O relate differently to different personality dimensions. For example, Ilies, Fulmer, Spitzmuller, and Johnson (2009) showed that OCB-I is more related to agreeableness, whereas OCB-O has stronger connections to conscientiousness. With respect to CWB, Mount, Ilies, and Johnson (2006) demonstrated that agreeableness was linked to CWB-I, whereas conscientiousness related to CWB-O (see also Berry, Ones, & Sackett, 2007). Because of these reasons, we differentiate between task performance, OCB-I/OCB-O, and CWB-I/CWB-O.

The hierarchical model of approach-avoidance motivation

To link within-person variation in CSEs to within-person variation in task performance, we draw on the hierarchical model of approach-avoidance motivation (Elliot, 2006). This model distinguishes between momentary approach and avoidance motivation—or the energization of behaviour towards positive and away from negative stimuli, respectively—and to do so, it builds on two central concepts: approach and avoidance temperaments and approach and avoidance goals. Approach and avoidance temperaments are innate, neuro-biologically inspired sensitivities towards positive or negative stimuli, respectively (Elliot & Thrash, 2002). They generalize across domains and situations and are responsible for the production of immediate affective, cognitive, and behavioural inclinations in response to specific stimuli. Although approach and avoidance temperament thus function as energizers of approach and avoidance behaviours, their impact on behaviour is mostly an indirect one as the direct regulation of behaviour through temperaments is typically rigid and unfocused (Elliot, McGregor, & Thrash, 2002). A flexible and focused regulation is achieved by the introduction of approach and avoidance goals, which are concrete cognitive representations of desired or undesired end states that guide people's behaviour (Elliot, 1997). In case of approach goals, effort is focused on pursuing a positive end state, whereas for avoidance goals the effort is directed towards avoiding negative end states (Elliot & Friedman, 2006).

In the hierarchical model of approach-avoidance motivation, goals and temperaments are related, with approach temperament typically being linked to approach goals, whereas avoidance temperament generally relates to avoidance goals (Elliot & Thrash, 2002). Yet, approach and avoidance goals are not only driven by one's temperament, but also by, for example, the characteristics of the environment and the individual's momentary cognitions and emotions (Elliot & Church, 1997; Fryer & Elliot, 2007). Taken together, the hierarchical model of approach-avoidance motivation suggests that momentary approach motivation (i.e., a momentary sensitivity towards positive stimuli and a motivation to obtain positive outcomes) and momentary avoidance motivation (i.e., a momentary sensitivity towards negative stimuli and a motivation to avoid negative outcomes) are guided by situation-specific approach and avoidance goals, which in turn are affected by one's temperament. In the remainder of the paper, we will draw on the distinction between momentary approach and momentary avoidance motivations to explain the relationship between momentary levels of CSEs and momentary levels of job performance.

Hypothesis development

Drawing on the approach-avoidance framework, we hypothesize that changes in state CSEs will positively predict momentary task performance. The reason is that high state CSEs go together with high momentary approach and low momentary avoidance motivation, and that this specific combination impacts momentary task performance positively through its effect on self-regulatory resources (Ferris et al., 2011). More specifically, high approach and low avoidance motivation require only a limited amount of self-regulatory resources, with the remaining resources enabling him/her to exclude task-irrelevant impulses while working on the relevant tasks (Ferris et al., 2011). Because of this reason, high state CSEs promote momentary task performance. In contrast, when an employee experiences low state CSEs, s/he is typically characterized by both low approach and high avoidance motivation, which is depleting for his/her self-regulatory resources. As a result, these resources cannot be used anymore to actively control the employees' behaviour towards fulfilling his/her tasks, which undermines the level of task performance. In summary, based on the approach-avoidance framework, our first hypothesis reads:

> *Hypothesis 1:* State CSEs relate positively to task performance.

With respect to the relationship between state CSEs and OCB, we expect state CSEs to positively predict momentary OCB-I and OCB-O. The reason is that high levels of state CSEs are associated with elevated levels of momentary approach motivation and reduced levels of momentary avoidance motivation. That is, people who are momentarily high on state CSEs seek for positive, rather than trying to avoid negative outcomes. One way to obtain such positive outcomes is by showing OCB, such as helping a colleague, which is an instance of OCB-I, or not taking a break and keeping on working, which is an example of OCB-O. In line with this reasoning, Allen and Rush (1998) indeed showed that engaging in OCB leads to positive outcomes such as being perceived as highly committed to the organization, being well-liked, and being presumed to engage in OCB for altruistic reasons. Vice versa, because people focus on avoiding negative outcomes rather than obtaining positive ones when they experience low momentary levels of CSEs, they will not be inclined to go the extra mile, which makes low state CSEs relate to decreased levels of OCB-I and OCB-O. Note that our prediction is also in line with the finding that positive affect and OCB are positively related (Shockley, Ispas, Rossi, & Levine, 2012). Because people low in state CSEs focus on negative rather than on positive stimuli, their level of momentary negative affect increases whereas their level of momentary positive affect decreases, and this relates to decreased levels of OCB. Hence, hypotheses 2a and 2b read:

> *Hypothesis 2a:* State CSEs relate positively to OCB-I.
> *Hypothesis 2b:* State CSEs relate positively to OCB-O.

Regarding the relationship between state CSEs and CWB, we expect state CSEs to negatively predict momentary CWB-I and CWB-O. Because employees with a high momentary level of state CSEs are high in approach and low in avoidance motivation, they have more self-regulatory resources at their disposal (Ferris et al., 2011). As these self-regulatory resources are needed to abstain from unethical behaviours (Gino, Schweitzer, Mead, & Ariely, 2011), which imply a short-term win but in the long term can be detrimental to co-workers and/or the organization (e.g., coming late to work and taking longer breaks), high levels of state CSEs will discourage the manifestation of counterproductive behaviours towards members of the organization (CWB-I) and towards the organization itself (CWB-O). In turn, low levels of CSEs are likely to relate to increased levels of CWB-I and CWB-O. One reason is that low levels of state CSEs are characterized by high avoidance motivation and low approach motivation, which deplete the employees' self-regulatory resources. This depletion of self-regulatory resources lowers the employees' self-control, which stimulates the occurrence of CWB towards individuals and the organization. The second reason for the negative relationship between state CSEs and CWB can be found in the affect-CWB literature, where it is found that the state negative affect (a component of low state CSEs) relates positively to CWB (Shockley et al., 2012). We therefore expect low levels of state CSEs to predict increases in CWB towards individuals and towards the organization. As a result, hypotheses 3a and 3b read:

> *Hypothesis 3a:* State CSEs relate negatively to CWB-I.
> *Hypothesis 3b:* State CSEs relate negatively to CWB-O.

Apart from the hypothesized directional relationships from state CSEs to momentary OCB and CWB, we will also test for reversed directionality. Theoretical indications for such a reversed relationship can be found in the CSEJAM model of Judge and colleagues (2012), in which state CSE is affected by a wide range of job and life experiences, including performance at work. In particular, performing well in one's job is believed to augment one's state CSEs, whereas failing at one's work should dampen it. To study these directional relationships, we performed two experience sampling studies; one in which employees were asked about their level of state CSEs, task performance, and OCB (OCB-I and OCB-O) three times a day, and another in which employees had to rate their levels of state CSEs and CWB (CWB-I and CWB-O) three times a day. These studies allowed us to test the within-person relationship between CSEs and momentary task performance, OCB-I, OCB-O, CWB-I, and CWB-O.

Study 1

In the first study, we focused on the positive sub-dimensions of job performance. More specifically, we tested the time-lagged relationships between state CSE, momentary levels of task performance, OCB-I, and OCB-O.

Method

Participants. Respondents were 54 employees from different Belgian companies. To collect the data, the researchers contacted participants within their own network, who in turn contacted some of their colleagues, asking them to participate in the study. Fifteen employees were men, 23 were women, and we did not receive biographical data of 16 respondents. On average, respondents who did provide us with biographical data were 36.00 years old (SD = 11.27) and their mean company tenure was 5.50 years (SD = 5.74). One year after the study, a post-hoc demographic survey was sent to all participants to assess their educational level, employment status, and professional sector. Twenty-three participants responded to this questionnaire. All of them worked in white-collar jobs and 78.30% were employed full-time. A college degree was obtained by 65.20%, whereas 34.80% reported having a high school degree. A vast majority of respondents (78.20%) reported working in public services (i.e., educational, governmental, and the nonprofit sector).

Procedure. The data were collected via an online survey system. Three times a day (i.e., before noon, in the early afternoon, and in the late afternoon) participants received an email including a link to a survey in which they had to report on their level of state CSEs and momentary levels of task performance, OCB-I, and OCB-O, and they did so for 10 consecutive working days. The scales measuring state CSEs, task performance, OCB-I, and OCB-O, as well as the items within each scale, were presented at random. This procedure resulted in 745 out of a maximum of 1,620 (54 employees × 3 measuring moments × 10 days) data points, which equals a response rate of 45.99%. Because we tested not only concurrent, but also lagged relationships, the effective number of unique observations—involving both concurrent and lagged observations—is 417 for state CSEs and momentary task performance and 416 for state CSEs and OCB.

Measures.

State CSEs. Because personality states are momentary enactments that have "the same affective, behavioral, and cognitive content as their corresponding traits" (Fleeson, 2012, p. 52), state CSEs were measured using the 12-item CSE-scale developed by Judge, Erez, Bono, and Thoresen (2003). The items were slightly adapted to obtain a momentary or state measure of CSEs. One of the items was "Since this morning/since the previous measurement moment, I was satisfied with myself". The items were rated on a seven-point scale, ranging from "completely disagree" to "completely agree". Due to a technical error, responses to the last two items of the scale (i.e., "I am capable of coping with most of my problems", and "There are times when things look pretty bleak and hopeless to me") were not recorded. To test the reliability of the remaining 10 items, we used the multilevel confirmatory factor analysis approach of Geldhof, Preacher, and Zyphur (2014). This test revealed that the within-person omega reliability coefficient of the state CSEs scale was .69.

Task performance. Task performance was measured using the seven-item task performance subscale of Williams and Anderson (1991), which we again slightly adapted to allow for momentary self-ratings of performance. One of the items was “Since this morning/since the previous measurement moment, I adequately completed assigned duties”. The seven items had to be rated on a seven-point scale, ranging from “completely disagree” to “completely agree”. The within-person omega reliability coefficient of the scale was .70.

OCB-I. OCB towards the individual (OCB-I) was measured using the six items of the OCB-I scale developed by Dalal et al. (2009), who specifically designed this scale for use in experience sampling studies. One of the items was “Since this morning/since the previous measurement moment, I tried to help a colleague”. For each item, the respondents had to indicate whether they did or did not perform the behaviour. As OCB-I is a formative construct pertaining to a set of behaviours that are conceptually related but not necessarily correlated (e.g., it is not because you helped a colleague that you also spoke highly about a co-worker to others), we calculated no internal consistency reliability index (see also Dalal et al., 2009).

OCB-O. OCB towards the organization (OCB-O) was measured using the six items of the OCB-O scale developed by Dalal et al. (2009) who specifically designed this scale for use in experience sampling studies. One of the items was “Since this morning/since the previous measurement moment, I talked positive about my organization to others”. For each of the items, the respondents had to indicate whether they did or did not perform the behaviour. Similar to OCB-O, no internal consistency reliability index was calculated.

Analyses. Because participants provided ratings three times a day for 10 consecutive working days, the data have a nested structure with i measurements nested within j days, which in turn are nested within k persons. To account for dependencies in the data due to this nested data structure, we analysed the data using three-level regression analysis with measurements at the first, days at the second, and persons at the third level. For task performance, we used the linear multilevel model, whereas OCB-O and OCB-I—being count variables—were modelled using three-level Poisson regression analysis. Note that there is no error term in these Poisson models because of its parameterization (i.e., the expected count implies a specific variance) (see Tables A1–A5 in Appendix). All analyses were performed in R; the linear three-level regressions with the lme4 package (Bates, 2010), and the three-level Poisson regressions using the glmmADMB package (Bolker, Skaug, Magnusson, & Nielsen, 2013).

As a first step, we tested concurrent relationships between state CSEs and performance. We did this by predicting task performance, OCB-I, and OCB-O at time t from state CSEs at time t. Because we are interested in within-person relationships, state CSEs were person-centred, which removes all between-person variation from the predictor. We also tested whether the effect of state CSEs was consistent across persons and days by examining whether the slope of state CSEs was random at the person and day levels. To do so, we tested whether a model with a random slope for state CSEs on the person level fitted our data significantly better than a model without random slopes. Similarly, to test whether the effect of state CSEs varied across days, we tested whether a model with a random slope for state CSEs on the day level gave a significantly better fit than a model without random slopes. Model comparison was done with the log-likelihood difference test. For reasons of parsimony, non-significant random slopes ($p > .05$) were trimmed.

In the second step, we tested time-lagged relationships between state CSEs and performance. This was done by predicting task performance, OCB-I, and OCB-O at time t from state CSEs at time $t - 1$, and predicting state CSEs at time t from task performance, OCB-I, and OCB-O at time $t - 1$. In these time-lagged models, we included autoregressive effects, that is, we added the time-lagged effect of the dependent variable to the model (see Fisher & To, 2012; Hofmans, Gelens, & Theuns, 2014). Note that the inclusion of these autoregressive effects implies that we tested to what extent changes in momentary performance can be predicted by state CSEs, and vice versa. As such, the inclusion of autoregressive effects allows for a true dynamic study of the hypothesized relationships. Again, in all models, the predictor variables were person-centred, which implies that we tested within-person relationships. We also tested whether the predictors in our models were random or fixed across persons and days, and only retained statistically significant random effects ($p < .05$). Because all hypotheses pertain to the fixed effects, we do not report the random effects.

Results

Means, standard deviations, correlations (between the person-centred variables), and intra-class correlations (ICCs) of state CSEs, OCB-I, and OCB-O are shown in Table 1. These ICCs (all computed using intercept-only three-level linear regression models) show, for each study variable, the proportion of variation that is due to between-person, between-day, and within-day differences. Overall, the ICCs show that a substantial part of the variation in all study variables is located at the within-person level. More specifically, 11% of the variance of state CSEs, 13% of the variance of task performance, 16% of the variance of OCB-I, and 19% of the variance of OCB-O is due to between-day differences.

Table 1. Means, standard deviations, ICCs and correlations for state CSE, task performance, OCB-I, and OCB-O.

	M	*SD*	$ICC_{between\text{-}person}$	$ICC_{between\text{-}day}$	$ICC_{within\text{-}day}$	1.	2.	3.
1. State CSE	5.14	.81	.64	.11	.25			
2. Task performance	5.41	.86	.56	.13	.31	.44**		
3. OCB-I	4.50	1.81	.55	.16	.29	.13**	.10**	
4. OCB-O	3.12	1.66	.46	.19	.35	.14**	.18**	.33**

Notes: $^{**}p < .01$ (two-tailed); *M* = mean; *SD* = standard deviation; ICC = intra-class correlation. The variables were person-centred before computing the correlations.

Further, 25% of the variance of state CSEs, 31% of the variance of task performance, 29% of the variance of OCB-I, and 35% of the variance of OCB-O is attributable to within-day differences. Because the ICCs reveal that an important share of the variation in CSEs, task performance, OCB-I, and OCB-O is located at the within-person level, they offer support for their state-like, dynamic nature.

Concurrent within-person relationships between state CSEs and performance. In the first analysis, we tested a three-level linear regression model in which task performance at time t was predicted by state CSEs at time t (see Model 1 in Table A1). This analysis revealed that state CSEs related positively to task performance (γ_{100} = .45; p < .001). Next, two three-level Poisson models were tested with OCB-I at time t and OCB-O at time t as the outcomes and state CSEs at time t as the predictor (see Model 1 in Tables A2 and A3, respectively). These models revealed that OCB-O (γ_{100} = .12; p = .011), but not OCB-I (γ_{100} = .07; p = .056), related positively to state CSE.

Time-lagged within-person relationships between state CSEs and performance. To test time-lagged relationships between state CSEs and task performance, two models were tested. In the first model, we predicted task performance at time t from state CSEs at time $t - 1$ and task performance at time $t - 1$ (see Model 2 in Table A1). In the second model, state CSEs at time t were predicted by task performance at time $t - 1$ and state CSEs at time $t - 1$ (see Model 3 in Table A1). These analyses revealed that state CSEs at time $t - 1$ were positively related to task performance at time t (γ_{100} = .13; p = .028), whereas the reversed effect of task performance at time $t - 1$ on state CSEs at time t was not statistically significant (γ_{100} = −.01; p = .779). The autoregressive effects of task performance (γ_{200} = .02; p = .605) and state CSEs (γ_{200} = .16; p = .060) were both not statistically significant.

Second, we tested time-lagged relationships between state CSEs and OCB-I. To do so, we tested a three-level Poisson regression model in which OCB-I at time t was predicted by state CSEs at time $t - 1$ and by OCB-I at time $t - 1$ (see Model 2 in Table A2). Moreover, we also tested a three-level linear regression model in which state CSEs at time t were predicted by OCB-I at time $t - 1$ and by state CSEs at time $t - 1$ (see Model 3 in Table A2). This analysis showed that neither the effect of state CSEs at time $t - 1$ on OCB-I at time t (γ_{100} = −.02; p = .726), nor the effect of OCB-I at time $t - 1$ on state CSEs at time t (γ_{100} = .03; p = .225) was statistically significant. The autoregressive effects of OCB-I (γ_{200} = .07; p = .002), but not those of state CSEs (γ_{200} = .15; p = .076), were statistically significant.

Third, time-lagged relationships between state CSEs and OCB-O were tested. To do so, we tested a three-level Poisson regression model in which OCB-O at time t was predicted from state CSEs at time $t - 1$ and OCB-O at time $t - 1$ (see Model 2 in Table A3), as well as a three-level linear regression model in which CSEs at time t were predicted from OCB-O at time $t - 1$ and state CSEs at time $t - 1$ (see Model 3 in Table A3). Similar to OCB-I, state CSEs at time $t - 1$ were unrelated to OCB-O at time t (γ_{100} = .03; p = .657), and OCB-O at time $t - 1$ also did not predict state CSEs at time t (γ_{100} = .02; p = .515). Moreover, the autoregressive effect of OCB-O (γ_{200} = .09; p < .001) was significant, whereas that of state CSEs was not (γ_{200} = .06; p = .420).

Study 2

In the second study, we tested the directional relationship between state CSEs and CWB. As CWB is a negative type of performance, testing the CSE–CWB relationship extends our first study, in which we focused on positive performance types only. Moreover, the second study will also act as a cross-behaviour replication check of the dynamics uncovered in the first one. To do so, we studied the effect of state CSEs on momentary CWB-I and CWB-O using an experience sampling study.

Method

Participants. Respondents were 32 employees from different Belgian companies. This sample consisted of participants that the researchers contacted within their own network, and who in turn contacted some of their colleagues, asking them to participate in the study. We made sure there was no overlap between the respondents of the two studies. Two of the participants filled in the demographical questionnaire, but did not start the experience sampling. The remaining 30 respondents held a wide variety of jobs and functions. Ten of the employees were men, 17 were women, and we did not receive biographical data for three participants. Respondents who did provide us with biographical data (n = 27) were on average 35.11 years old (SD = 9.90) and their mean company tenure was 8.52 years (SD = 9.33). Similar to Study 1, a post hoc survey was sent to the respondents to be able to describe the study sample. Nineteen respondents answered this post-hoc survey. A majority of them worked full-time (89.50%), 68.4% were white-collar workers and 89.50% reported having obtained at least a college degree. These participants reported working in a variety of sectors, with the majority of respondents working for the government (21.10%), in education (15.80%), professional services (15.80%), and health care (10.50%).

Procedure. Similar to the first study, data were collected using an online survey system. Three times a day (i.e., before noon, in the early afternoon, and in the late afternoon) participants received an email including a link to a survey in which they had to report on their momentary state CSEs, CWB-I, and CWB-O, and they did so for five consecutive working days. This resulted in 305 out of a maximum of 450 (30 employees × 3 measuring moments × 5 days) data points, which corresponds to a response rate of 67.78%. Because we tested for lagged relationships, we had 166 effective observations, including both concurrent and lagged observations. The scales measuring state CSEs, CWB-I, and CWB-O, as well as the items within each of these scales, were presented at random to avoid order effects.

Measures.

State CSEs. The same 12-item State CSE measure from Study 1 was used. The within-person omega reliability coefficient of the 12-item scale equalled .80.

CWB-I. CWB towards the individual (CWB-I) was measured using the six items of the CWB-I scale developed by Dalal et al. (2009); a scale specifically designed for use in experience sampling studies. One of the items was "Since this morning/since the previous measurement moment, I excluded a coworker from a conversation". For each of the items, the respondents had to indicate whether they did or did not perform the behaviour. As CWB-I is a formative construct, no internal consistency reliability was computed.

CWB-O. CWB towards the organization (CWB-O) was measured using the six items of the CWB-O scale developed by Dalal et al. (2009). One of the items was "Since this morning/since the previous measurement moment, I spent time on a task unrelated to work". For each of the items, the respondents had to indicate whether they did or did not perform the behaviour. Again, no internal consistency reliability was computed because of the formative nature of the construct.

Analyses. The analytical procedure was identical to that in Study 1. In particular, when CWB-I and CWB-O were the dependent variables, we tested three-level Poisson regression models, whereas three-level linear regression models were tested when state CSEs were the outcome. Again, the predictors were person-centred to test within-person effects and all slopes were tested for randomness. In what follows, only the fixed effects are reported.

Results

Means, standard deviations, correlations (between the person-centred variables), and ICCs of state CSEs, CWB-I, and CWB-O are shown in Table 2. These ICCs (all computed using intercept-only three-level linear regression analyses) again showed that for all study variables a substantial part of the variation is due to within-person differences. More specifically, 21% of the variance of state CSEs, 15% of the variance in CWB-I, and 16% of the variance in CWB-O is located at the between-day level, whereas 22% of the variance in state CSEs, 70% of the variance in CWB-I, and 44% of the variance in CWB-O is situated at the within-day level. As a result, our data again support the state-like nature of CSEs, CWB-I, and CWB-O. Similar to Study 1, in the remainder of the "Results" section, we report on the within-person relationships between state CSEs, CWB-I, and CWB-O only.

Table 2. Means, standard deviations, ICCs and correlations for state CSE, CWB-I, and CWB-O.

	M	SD	$ICC_{between\text{-}person}$	$ICC_{between\text{-}day}$	$ICC_{within\text{-}day}$	1.	2.
1. State CSE	5.67	.72	.57	.21	.22		
2. CWB-I	0.45	0.81	.15	.15	.70	−.25**	
3. CWB-O	0.85	1.22	.40	.16	.44	−.30**	.10†

Notes: **p < .01 (two-tailed); $^{\dagger}p$ < .10 (two-tailed); M = mean; SD = standard deviation; ICC = intra-class correlation. The variables were person-centred before computing the correlations.

Concurrent within-person relationships between state CSEs and performance. We tested two three-level Poisson models with CWB-I and CWB-O at time t as the outcomes and state CSEs at time t as the predictor (see Model 1 in Tables A4 and A5 respectively). In line with our hypotheses, these models showed that both CWB-I ($\gamma_{100} = -.65$; $p < .001$) and CWB-O ($\gamma_{100} = -.39$; $p < .001$) were negatively related to state CSEs at the within-person level.

Time-lagged within-person relationships between state CSEs and performance. Time-lagged relationships between state CSEs and CWB-I were tested with two models. In the first three-level Poisson regression model, CWB-I at time t was predicted by state CSEs at time $t - 1$ and by CWB-I at time $t - 1$ (see Model 2 in Table A4), whereas in the second three-level linear regression model state CSEs at time t were predicted by CWB-I at time $t - 1$ and by state CSEs at time $t - 1$ (see Model 3 in Table A4). These analyses showed that neither the effect of state CSEs at time $t - 1$ on CWB-I at time t ($\gamma_{100} = -.40$; $p = .180$), nor the effect of CWB-I at time $t - 1$ on state CSEs at time t ($\gamma_{100} = -.01$; $p = .815$) was statistically significant. The autoregressive effect of state CSEs was statistically significant ($\gamma_{200} = .40$; $p = .002$), whereas that of CWB-I was not ($\gamma_{200} = .06$; $p = .700$).

To test time-lagged relationships between state CSEs and CWB-O, we tested a three-level Poisson regression model in which CWB-O at time t was predicted by state CSEs at time $t - 1$ and by CWB-O at time $t - 1$ (see Model 2 in Table A5), and a three-level linear regression model in which state CSEs at time t were predicted by CWB-O at time $t - 1$ and by state CSEs at time $t - 1$ (see Model 3 in Table A5). Similar to the previous analysis, the effect of CWB-O at time $t - 1$ on state CSEs at time t was not statistically significant ($\gamma_{100} = -.03$; $p = .380$). State CSEs at time $t - 1$, however, negatively predicted CWB-O at time t ($\gamma_{100} = -.45$; $p = .007$). Again, the autoregressive effect was significant for state CSEs ($\gamma_{200} = .39$; $p = .003$) but not for CWB-O ($\gamma_{200} = .17$; $p = .068$).

General discussion

Recent meta-analytical research has shown that between-person differences in CSEs relate to between-person differences in performance (Chang et al., 2012). The results from the current study add to this body of knowledge by showing that (1) CSEs not only vary between individuals, but also fluctuate substantially within a person and within days, and (2) within-person fluctuations in CSEs are predictive of within-person fluctuations in task performance and CWB towards the organization, rather than the other way around. In what follows, we discuss the theoretical and practical implications of these findings.

Theoretical implications

Previous research has convincingly shown that between-person differences in CSEs relate to between-person differences in performance. Whereas our results confirm that a considerable part of the variation in CSEs is indeed due to stable, between-person differences, they also show that a substantial part of the variation in state CSEs is located within the individual. This implies that, in accordance with the integrative approach to personality (Judge et al., 2014), CSEs can be seen as a collection of states (see also Dóci & Hofmans, 2015) that vary around a person-specific home base (i.e., the trait level). In other words, our results demonstrate that, whereas people differ in their average levels of CSEs (i.e., their trait CSE level), they also substantially vary around this average level as a function of their daily experiences at work (i.e., their CSE states). Note that this conceptualization of CSEs links up with the density distribution approach of Fleeson (2001), according to whom traits are conceived as the centre of gravity of a distribution of states, and with the conceptualization of CSEs by Judge, Van Vianen, and De Pater (2004) and Judge, Hurst, and Simon (2009), who hinted at the existence of within-person differences in CSEs.

Another consequence of the exclusive between-person focus that has dominated previous research is that it does not allow answering the question whether the between-person relationship between CSEs and job performance also holds at the within-person level. We found that, in line with the results at the between-person level (see Chang et al., 2012), state CSEs are positively related to task performance and OCB-O, whereas it relates negatively to CWB-O and CWB-I. Moreover, and in line with findings at the between-person level—where it has been found that CSEs relate more strongly to OCB-O than to OCB-I (Chang et al., 2012)—our results revealed that CSEs relate to OCB-O but not to OCB-I. Although the latter result was not anticipated, the finding that CSEs are unrelated to citizenship behaviour towards other individuals links up with the well-established finding that OCB-O and OCB-I have different (personality) antecedents (Kaufman, Stamper, & Tesluk, 2001; McNeely & Meglino, 1994; Somech & Drach-Zahavy, 2004). In particular, OCB-I has been found to relate primarily to agreeableness, which is an interpersonal personality dimension, whereas OCB-O relates more strongly to conscientiousness, which is a task-oriented personality dimension (Ilies et al., 2009; Mount et al., 2006). Because state CSEs are task-oriented rather than interpersonal, the finding that CSEs relate to citizenship behaviour towards the organization and to task performance and not to citizenship performance towards the individual is in line with these findings. Moreover, our finding can also be explained using attribution theory (Heider, 1958). Attribution theory states that because people have the need to understand and control their environment, they develop causal explanations to justify their own behaviour. Applied to the relationship between state CSEs and extra-role performance, this implies that people constantly try to identify the source of their CSEs and then reciprocate towards this source with OCB (Ilies et al., 2009). Because CSEs are predominantly influenced by various organization-related, rather than co-worker-related features—Judge et al. (2012) argued that performing one's job well, achieving valued outcomes, attaining success in one's occupation, meeting or exceeding important work, job, and career goals, performing interesting, challenging, and meaningful work, and obtaining worthwhile and positive job feedback (whether from the work itself or from others) increases people's CSEs—employees will typically engage in OCBs that benefit the organization rather than the colleagues. Note that the positive relationship between CSEs and task performance is also in line with this idea as increased task performance benefits the organization rather than specific individuals within this organization.

The third disadvantage of between-person, cross-sectional studies on the CSEs–performance link is that they are not informative regarding the directionality of the relationship between CSEs and performance. Our results showed that state CSEs positively predicted future task performance and negatively predicted future CWB towards the organization, whereas the reversed relationships did not hold. By doing so, the present study is the first to offer tentative support for a directional relationship that goes from state CSEs to performance, which is in line with the claim of Judges, Erez, et al. (1998) that high CSEs bring people into a "positive frame", and that this positive frame stimulates high approach and low avoidance motivation, which causes people to show more task performance, and less CWB towards the organization. At the same time, it is important to realize that our study focused on short-term changes in state CSEs and performance only. There is however still a lot to learn about the effect of time in psychological research in general and about time effects in CSEs in particular (see Roe, 2008) and further research should thus investigate to what extent CSEs vary over longer periods of time (e.g., weeks, months, years; see Wu and Griffin (2012) for a first step) and what its long-term effects on performance are. This timing issue is particularly relevant for the CSEs–performance relationship, as it may be that state CSEs are not affected by single performance episodes, but rather by accumulations of success experiences or positive performance episodes. This idea of cumulative effects is not new and has recently been touched upon by Baethge, Rigotti, and Roe (2015), who applied it in their theoretical framework on cumulative interruptions at work.

Practical implications

Because CSEs fluctuate within a person, it can probably be changed via development programmes or other types of interventions. As high state CSEs relate to higher task performance and to lower CWB-O, it can be interesting for managers and HR practitioners to assess and, if necessary, develop employees' state CSEs in an attempt to increase their levels of task performance and to lower their levels of counterproductive behaviour. Of particular relevance here is that managers should (1) be able to detect a decrease in their employees' state CSE levels and (2) adequately respond to these fallbacks. Such a response can consist of several possible organizational interventions. Letting employees perform interesting, meaningful, and challenging tasks, or giving employees positive and worthwhile feedback could enhance their state level of CSEs (Judge et al., 2012), thereby increasing the level of task performance and decreasing the level of CWB-O. Whereas this practical implication is tentative given that we did not include the antecedents of state CSEs in our research design, previous research has demonstrated that state CSEs can be influenced (Nübold, Muck, & Maier, 2013).

Second, our findings imply that for selection and promotional purposes it may be insufficient to solely focus on a person's level of trait CSEs, given the clear fluctuations in state CSEs and their repercussions for employees' task performance and extra-role performance. Consequently, if a practitioner wants to incorporate an assessment of CSEs in a selection procedure, (s)he ought to focus on both the overall trait CSE level *and* momentary assessments of state CSEs. The latter can, for example, be done using the frame-of-reference approach (Hunthausen, Truxillo, Bauer, & Hammer, 2003), which involves asking questions about a person's momentary CSEs in specific situations, such as "How confident do you feel 'at work'". The second possibility is to use situational interviews in which candidates are asked how they reacted or would react in certain situations, or assessment centres in which people are observed in a wide range of different situations (Jansen et al., 2013; Lievens, Peeters, & Schollaert, 2008). The antecedents of state CSEs identified in the CSEJAM model (Judge et al., 2012) may serve as an indication of the type of situations one needs to incorporate in such situational interviews or assessment centres to successfully trigger variation in state CSEs.

Limitations and further research

The first limitation concerns the sample sizes of our studies. Although the samples were rather small, Scherbaum and Ferreter (2009) argued that for multilevel designs a sample size of 30 at the person level is sufficient to avoid biased results. Moreover, in the context of repeated measures designs, the concept of sample size is not that straightforward because of the multilevel nature of the data. Because in both studies our predictors and criteria were situated at the lowest, momentary level and not at the highest, person-level, the effective sample size is the number of observations at the lowest level (Ohly, Sonnentag, Niessen, & Zapf, 2010). At this level, our samples (i.e., 417, 416, and 166 for the state CSEs–task performance, the state CSEs–OCB, and the state CSEs–CWB relationships, respectively) were sufficiently large.

Closely related to the issue of sample size are the low response rates (i.e., 45.99% and 67.78% for Study 1 and Study 2, respectively). One possible explanation might be the usage of convenience sampling. A downside of this sampling technique is the lack of personalized contact with participants, which is one of the most important correlates of response rate in web-based studies (Cook, Heath, & Thompson, 2000). Furthermore, the convenience sampling technique did not allow for an analysis of the number of participants that were contacted and the number thereof that chose not to participate. Since we do not have this information, we could not test whether our participants differed from those who decided not to partake.

Third, as all variables were measured using self-reports, same source bias may account for some of our findings. However, whereas this might have inflated the concurrent relationships, it is less problematic in our time-lagged models as the use of time lags substantially reduces the issue of same-source bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Fourth, due to a recording problem in the experience sampling software in Study 1, the last two items of the CSE scale could not be used to calculate a state CSEs measure. Although this could put the validity of the CSEs measure in the first study at risk, we are confident that this was not the case, as a similar pattern of results was obtained in both studies, with the second study using all CSE items.

Fifth, we found clear directionality in the sense that within-person variations in state CSEs preceded within-person variations in momentary task performance and CWB towards the organization, whereas the reversed relationship was not statistically significant. However, whereas temporal precedence is a necessary condition for causality, it is not a sufficient one. To conclude that increased state CSEs *cause* higher task performance and CWB towards the organization, experimental research is needed in which state CSEs are manipulated rather than measured. Such an experimental design will also allow in making a clear distinction between temporal (i.e., stability/variability of CSEs over time) and situational (i.e., consistency/variability of CSEs across situations) variability of CSEs, something that cannot be separated in our study.

Turning to opportunities for further research, we demonstrated that CSEs fluctuate both between and within individuals, and that within-person variability in CSEs precedes within-person variability in task performance and CWB towards the organization. However, to know which of the state CSE components relate strongest to the different types of performance, the role of each of the subcomponents of CSEs (i.e., generalized self-efficacy, self-esteem, locus of control, and emotional stability) in performance should be studied. Unfortunately, this could not be tested in our data because the items of Judge et al.'s (2003) CSE scale are not uniquely related to one of the four dimensions of CSEs. Instead, each item measures several of CSE's sub-dimensions simultaneously, making it impossible to compute a separate generalized self-efficacy, self-esteem, locus of control, and neuroticism score. A second logical question for further research pertains to the empirical study of potential antecedents of state CSEs. To answer this question, the CSEJAM model of Judge et al. (2012) may serve as a good starting point. In this model, Judge et al. (2012) identified a number of situational and person-related factors that are hypothesized to impact state CSEs. With respect to the situation side, various aspects of one's life and work environment, such as job rewards, goal attainment, intrinsic rewards, and feedback, are included. At the person-side, and in line with the integrative approach to personality (Judge et al., 2014) and the density distribution approach of Fleeson (2001), people with high levels of trait CSEs are believed to have higher levels of state CSEs. Moreover, and in line with the Trait-Activation Theory of Tett and Burnett (2003), the CSEJAM model predicts that the situational and person-related factors interact in the sense that the degree to which the aspects of one's work environment trigger state CSEs varies as a function of the person's trait CSEs level. In particular, the state CSEs of people high in trait CSEs would increase more when receiving a job reward because these people believe that they deserve such job rewards. However, to test these propositions, further research is needed.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Agentschap voor innovatie door wetenschap en technologie (IWT) [grant number 121358]; and Fonds Wetenschappelijk Onderzoek - Vlaanderen (FWO) [grant number G.0237.13N].

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Appendix

Table A1. Overview of concurrent and lagged models for task performance.

		Est.	*SE*	*p*-Value
Model 1	$\text{Perf}_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + (\gamma_{100} + \mu_{10k} + \mu_{1jk})\ \text{CSE}_{t\ ijk} + e_{ijk}$			
	γ_{000}	5.43	.10	<.001
	γ_{100}	.45	.06	<.001
	$\sigma^2\ (\mu_{00k})$	.42	–	–
	$\sigma^2\ (\mu_{0jk})$	.06	–	–
	$\sigma^2\ (\mu_{10k})$	.06	–	–
	$\sigma^2\ (\mu_{1jk})$	.12	–	–
	e_{ijk}	.16	–	–
Model 2	$\text{Perf}_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}\ \text{CSE}_{t-1\ ijk} + \gamma_{200}\ \text{Perf}_{t-1\ ijk} + e_{ijk}$			
	γ_{000}	5.46	.11	<.001
	γ_{100}	.13	.06	.028
	γ_{200}	.02	.05	.605
	$\sigma^2\ (\mu_{00k})$	.45	–	–
	$\sigma^2\ (\mu_{0jk})$	.13	–	–
	e_{ijk}	.14	–	–
Model 3	$\text{CSE}_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}\ \text{Perf}_{t-1\ ijk} + (\gamma_{200} + \mu_{20k})\ \text{CSE}_{t-1\ ijk} + e_{ijk}$			
	γ_{000}	5.20	.11	<.001
	γ_{100}	−.01	.05	.779
	γ_{200}	.16	.08	.060
	$\sigma^2\ (\mu_{00k})$	.47	–	–
	$\sigma^2\ (\mu_{0jk})$	.07	–	–
	$\sigma^2\ (\mu_{20k})$	.07	–	–
	e_{ijk}	.16	–	–

Table A2. Overview of concurrent and lagged models for OCB-I.

		Est.	*SE*	*p*-Value
Model 1	OCB-I $_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE $_{t\ ijk}$			
	γ_{000}	1.43	.06	<.001
	γ_{100}	.07	.04	.056
	$\sigma^2\ (\mu_{00k})$	.17	–	–
	$\sigma^2\ (\mu_{0jk})$	<.001	–	–
Model 2	OCB-I $_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE $_{t-1\ ijk}$ + γ_{200} OCB-I $_{t-1\ ijk}$			
	γ_{000}	1.43	.07	<.001
	γ_{100}	−.02	.06	.726
	γ_{200}	.07	.02	.002
	$\sigma^2\ (\mu_{00k})$	.17	–	–
	$\sigma^2\ (\mu_{0jk})$	<.001	–	–
Model 3	CSE $_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ OCB-I $_{t-1\ ijk}$ + $(\gamma_{200} + \mu_{20k})$ CSE $_{t-1\ ijk} + e_{ijk}$			
	γ_{000}	5.21	.11	<.001
	γ_{100}	.03	.02	.225
	γ_{200}	.15	.08	.076
	$\sigma^2\ (\mu_{00k})$	.47	–	–
	$\sigma^2\ (\mu_{0jk})$	.07	–	–
	$\sigma^2\ (\mu_{20k})$	.07	–	–
	e_{ijk}	.16	–	–

Table A3. Overview of concurrent and lagged models for OCB-O.

		Est.	*SE*	*p*-Value
Model 1	OCB-O$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE$_{t\ ijk}$			
	γ_{000}	1.07	.07	<.001
	γ_{100}	.12	.05	.011
	$\sigma^2\ (\mu_{00k})$	.18	–	–
	$\sigma^2\ (\mu_{0jk})$	<.001	–	–
Model 2	OCB-O$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE $_{t-1\ ijk} + \gamma_{200}$ OCB-O$_{t-1\ ijk}$			
	γ_{000}	1.02	.08	<.001
	γ_{100}	.03	.07	.657
	γ_{200}	.09	.02	<.001
	$\sigma^2\ (\mu_{00k})$	.20	–	–
	$\sigma^2\ (\mu_{0jk})$	<.001	–	–
Model 3	CSE$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + (\gamma_{100} + \mu_{10k})$ OCB-O$_{t-1\ ijk}$ + $(\gamma_{200} + \mu_{20k})$ CSE$_{t-1\ ijk} + e_{ijk}$			
	γ_{000}	5.20	.11	<.001
	γ_{100}	.02	.03	.515
	γ_{200}	.06	.07	.420
	$\sigma^2\ (\mu_{00k})$	.48	–	–
	$\sigma^2\ (\mu_{0jk})$	.07	–	–
	$\sigma^2\ (\mu_{10k})$	.02	–	–
	$\sigma^2\ (\mu_{20k})$	.07	–	–
	e_{ijk}	.13	–	–

Table A4. Overview of concurrent and lagged models for CWB-I.

		Est.	*SE*	*p*-Value
Model 1	CWB-I$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE$_{t\ ijk}$			
	γ_{000}	−1.17	.20	<.001
	γ_{100}	−.65	.18	<.001
	$\sigma^2\ (\mu_{00k})$	.55	–	–
	$\sigma^2\ (\mu_{0jk})$	.23	–	–
Model 2	CWB-I$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE$_{t-1\ ijk}$ + γ_{200} CWB-I$_{t-1\ ijk}$			
	γ_{000}	−1.31	.24	<.001
	γ_{100}	−.40	.30	.180
	γ_{200}	.06	.17	.700
	$\sigma^2\ (\mu_{00k})$	.28	–	–
	$\sigma^2\ (\mu_{0jk})$	.57	–	–
Model 3	CSE$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk})$ + γ_{100} CWB-I$_{t-1\ ijk}$ + $(\gamma_{200} + \mu_{20k})$ CSE$_{t-1\ ijk} + e_{ijk}$			
	γ_{000}	5.61	.11	<.001
	γ_{100}	−.01	.05	.815
	γ_{200}	.40	.11	.002
	$\sigma^2\ (\mu_{00k})$	.35	–	–
	$\sigma^2\ (\mu_{0jk})$	.02	–	–
	$\sigma^2\ (\mu_{20k})$	.13	–	–
	e_{ijk}	.15	–	–

Table A5. Overview of concurrent and lagged models for CWB-O.

		Est.	*SE*	*p*-Value
Model 1	CWB-O$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CSE$_{t\ ijk}$			
	γ_{000}	−.52	.21	.013
	γ_{100}	−.39	.12	<.001
	$\sigma^2\ (\mu_{00k})$	1.00	–	–
	$\sigma^2\ (\mu_{0jk})$	.09	–	–
Model 2	CWB-O$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk})$ + γ_{100} CSE$_{t-1\ ijk} + \gamma_{200}$ CWB-O$_{t-1\ ijk}$			
	γ_{000}	−.61	.22	.006
	γ_{100}	−.45	.17	.007
	γ_{200}	.17	.09	.068
	$\sigma^2\ (\mu_{00k})$	.92	–	–
	$\sigma^2\ (\mu_{0jk})$	<.001	–	–
Model 3	CSE$_{t\ ijk} = (\gamma_{000} + \mu_{00k} + \mu_{0jk}) + \gamma_{100}$ CWB-O$_{t-1\ ijk}$ + $(\gamma_{200} + \mu_{20k})$ CSE$_{t-1\ ijk} + e_{ijk}$			
	γ_{000}	5.61	.12	<.001
	γ_{100}	−.03	.04	.380
	γ_{200}	.39	.11	.003
	$\sigma^2\ (\mu_{00k})$	.36	–	–
	$\sigma^2\ (\mu_{0jk})$	.02	–	–
	$\sigma^2\ (\mu_{20k})$	.13	–	–
	e_{ijk}	.15	–	–